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NOTES ON THE KENNICOTT'S SCREECH OWL (*OTUS ASIO KENNICOTTI*) IN THE PUGET SOUND REGION.

BY J. HOOPER BOWLES.

THE following notes, unless otherwise specified, are taken entirely from the vicinity of Tacoma, Washington, which is situated on Puget Sound at the head of Commencement Bay. This region, together with the vicinity of the fresh water lakes, rivers and marshes of the surrounding country, furnish many attractions for this subspecies, which at the best is by no means common in any part of its range. There seems no apparent reason why it should not be as abundant as the owls of this genus that are found in New England or California, with both of which I am very familiar, but such is far from being the case. The most favored localities are in the immediate vicinity of water, either fresh or salt, where the country is to some extent open. Deciduous timber seems to be given a slight preference over the fir woods, as a rule, though during the day the birds are usually found hiding amongst the dark foliage of some young fir.

It is a resident throughout the year, and is probably no more abundant at one season than another, although it is much more often heard calling during the fall than at any other time.

The size of the birds in this vicinity is a matter of considerable interest to me when I compare them with the measurements of this form as given in the books. These would seem to indicate that a length of ten inches or more might be expected, but my experience has been that such is never the case. Specimens that I have had in my collection measured, before skinning, from 8.80 inches to 9.25 inches in length, the average being about 9.04 inches, and I believe that I can confidently assert that I have never seen one ten inches long. I do not for a moment wish to suggest the probability of a new race, although one cannot help recalling the formerly described Puget Sound Screech Owl in this connection, but it would seem of interest to indicate the size of the birds from this section of Puget Sound. Unlike a majority of the other *Raptores* the females are frequently smaller in size than the males,

neither sex appearing to have any regular advantage in this respect. As this article is intended to describe the habits of the birds, rather than to enter into technicalities regarding size and plumage, I will state briefly that we do not have two distinct color phases such as are found in the bird of the eastern states. Broadly speaking, our bird is brownish on the upper parts, heavily streaked with darker brown on the lower parts. Some specimens are slightly more grayish than others, especially on the lower parts, but there is surprisingly little variation to be found among them.

My experience has been that the nests are very rarely found, as in twenty years collecting I have seen only five sets of their eggs from this section. Three nests containing young have also been examined, although I have spared no pains in trying to locate their home sites. The eggs are almost invariably deposited in natural hollows in trees, the only exceptions being extra big holes made by the Northwestern Flicker (*Colaptes cafer saturation*). One of these two cases was a hole that had been excavated to a depth of only about six inches, in a lone dead fir stub that stood in a vacant lot in the city. A most unusual nesting site in every way for these owls, as the cavities used are most often two or three feet in depth and situated in well wooded localities. The nests that I have seen were placed from four to twelve feet above the ground, but it is impossible to say what the average height may be in this country where trees two hundred feet tall are the rule rather than the exception. No lining is used in the nests, unless this term might be applied to a goodly supply of feathers belonging to the Steller's Jay, Northwestern Flicker, etc., which gradually accumulate as incubation advances.

The nesting season commences in April and it is probable that the 15th might be set as an average date for fresh eggs. However, as is the custom with nearly all of our northwestern birds, the date for first layings is subject to great variation. One pair, from which I took a set of three eggs each season for two years, laid their eggs during the first week of May, but I believe this to be an unusually late date for this bird. I think that complete sets will usually be found to contain three eggs, although two are nearly as often the full number. In only one instance have I seen as many as four. In color they are pure white and some-

what glossy, with more or less nest stain according to the state of incubation. They are usually nearly spherical in shape, like the eggs of most owls, but occasionally there is a slightly elliptical tendency. The size is, perhaps, greater than any of the eggs of the other Screech Owls, and they are a source of never failing surprise to me when I compare them with the sitting bird which looks puny beside them. The average measurements of eggs from this locality is 1.59×1.31 inches, the extremes being 1.48×1.27 inches in the above mentioned set of two eggs, and 1.65×1.35 inches in the set of four. It will doubtless be a matter of interest to give the measurements of a complete set of two eggs taken at Victoria, B. C., by Mr. Walter F. Burton of that city. These measured 1.42×1.26 and 1.42×1.24 inches, but I am unable to say how nearly typical they may be for eggs from that locality.

In regard to their powers of sight it is my opinion that their sight is not very greatly impaired by daylight unless there is unusually bright sunshine. If the eggs are incubated to some extent the sitting bird may be taken from the nest and handled at will, but it is doubtful if the light has much if any dazing effect as has been suggested. They appear just as inactive if they are not taken out of the hole, permitting the eggs to be removed from beneath them without remonstrance and with very little movement. The only set of fresh eggs that I have ever seen were in a nest found by Mr. E. A. Kitchin, of Tacoma, and in this instance the actions of the sitting bird were entirely different. Upon putting my arm into the cavity it was greeted by a rapid snapping of the beak and fluttering of wings. As we had no idea what might be in the hole my arm was very promptly withdrawn, being at once followed by the owl itself. She sat in the entrance for a moment looking at us in an extremely hostile fashion and then darted swiftly out of sight through the trees, seeming to see perfectly well where she was going. Another time I was attempting to "squeak" up some small birds in a thicket when one of these owls flew up and perched on a limb within three feet of my head. I remained perfectly motionless and the bird stared hard at me for a while and then looked rapidly around in all directions. The body was bent forward and the ear tufts laid back, making as menacing and

wicked looking a little face as one might wish to see, and there is very little doubt that any wandering mouse would have been seen and snapped up at the first movement. In this connection it is curious that in many instances neither birds of prey nor wild animals seem to recognize a human being when they are drawn up by this "squeaking" process. I have had a red fox come up to within ten feet of me when I was sitting in plain sight without making out my identity in the least. It looked me over carefully seeming to examine me inch by inch, and then watched the ground with ears pricked forward and every sense apparently on the alert. The probability is, I believe, that they are expecting some small object like a mouse, consequently so large a body as a human being passes unnoticed. This is only natural, for we humans are liable to much the same error. It is doubtful, for instance, if there are many oölogists who, in a careful search among the trees for some warbler or creeper nest, have not once or twice passed over the nest of some hawk or crow that was in perfectly plain sight. It has happened to me more than once, the large nests being found afterwards. In both animal, bird, and man the eyes are focussed for the smaller object, the larger one being seen but not comprehended because unlooked for.

The variety of food eaten by these owls has formed a most interesting study, the results of which it seems justifiable to give in considerable detail. A great majority of the stomachs that I have examined were from birds taken during the fall and winter months, the contents being for the most part the remains of mice of different kinds. One interesting exception is that of a male given me by Mr. Stanton Warburton, Jr., of Tacoma. This bird was taken on January 6, 1917, at which time the thermometer was somewhat above freezing with no snow on the ground. The stomach contained eleven cut-worms, two centipedes, one mole cricket, one good sized beetle, and other insect remains. With all this on the credit side of their ledger, these owls are at times subject to some most astounding falls from grace. The fact does not reflect very greatly to their credit that nests containing incubated eggs or young are usually well sprinkled with the feathers of smaller birds. However, this might be more or less natural if rodents and other small animals were scarce, but the following

incidents seem beyond all comprehension. One friend told me that he heard an outcry among the ducks in his yard one night and, upon going out with a lantern, "found a Screech Owl riding around on the back of one of the big ducks, hanging onto its neck." This may seem no more than odd, but another friend, Dr. G. D. Shaver, of Tacoma, had his faith in these little owls completely shattered. A pair came and nested on his place within a short distance of his pens of gamebirds and fancy bantams, and, as the entrance of the nest was only four feet from the ground, the doctor took great pleasure in watching the sitting bird and her family as they grew up. One morning during the winter of 1914-1915, which was a very mild season, he was nearly overcome upon visiting his yards to find two dead Golden Pheasants, four dead Ring-necked Pheasants, and one Ring-neck cock so badly hurt that it died a few days later. All were, of course, grown birds at that time of the year. The injuries were nearly all gashes and rips in the head and neck, so the blame was laid to rats although none were ever seen or caught there. However, the pens were completely enclosed in two inch mesh hen-wire netting and nothing of the kind happened again that winter, the owls nesting in their regular homestead the following spring. The winter of 1915-1916 was the most severe that Tacoma has experienced in twenty years, and one morning the doctor found a screech owl in his quail pen, in the snow, and close by the neatly plucked body of a Varied Thrush. This aroused his suspicions so he killed the owl, not wishing to take any chances of losing his quail. Incidentally it was interesting to find that a bird as large as the owl could enter through a two inch wire mesh. On the morning of February 4, 1916, the doctor visited his yards and found a scene of murder similar to that of the previous year. In one pen were four of his prize Buff Cochins Bantams mangled and dead, some being in their house and others out in their yard, while in another pen were two fine cock Golden Pheasants in a similar condition. The wounds were similar in location and character to those made on the birds killed about a year before, but this time part of the head of one of the bantams had been eaten. There was no indication whatever of what had caused the damage, nor of how any predatory creature could have entered, so the doctor put a liberal dose of strychnine

into the body of the partly eaten bantam and replaced it in the same spot where he found it. Next morning the seemingly impossible was made a practical certainty, for he found the body of a screech owl with the claws of one foot firmly imbedded in the body of the bantam. He very kindly presented me with the owl which, upon dissection, proved to be a female, its stomach containing a very considerable amount of bantam flesh and feathers, together with a great deal of wheat. (It seems probable that the wheat was accidentally swallowed with the crop of the bantam during the feast, but there was so much that it seems strange the owl did not discard it while eating). How a bird only 9.12 inches in length could have dealt out such havoc in so short a time is almost incredible, but, although purely circumstantial, the evidence against the owl appeared altogether too strong for even a reasonable doubt. The doctor and I wished to make as certain as possible, however, so the poisoned bantam was replaced and left for several days, but without any further results. For the above mentioned reasons I am rather doubtful as to the net value of this owl from an economic standpoint, although birds in a wild state would not give them such opportunities for such wanton killing as birds enclosed in pens.

THE NICHE-RELATIONSHIPS OF THE CALIFORNIA THRASHER.¹

BY JOSEPH GRINNELL.

THE California Thrasher (*Toxostoma redivivum*) is one of the several distinct bird types which characterize the so-called "Californian Fauna." Its range is notably restricted, even more so than that of the Wren-Tit. Only at the south does the California Thrasher occur beyond the limits of the state of California, and in that direction only as far as the San Pedro Martir Mountains and

¹ Contribution from the Museum of Vertebrate Zoölogy of the University of California.